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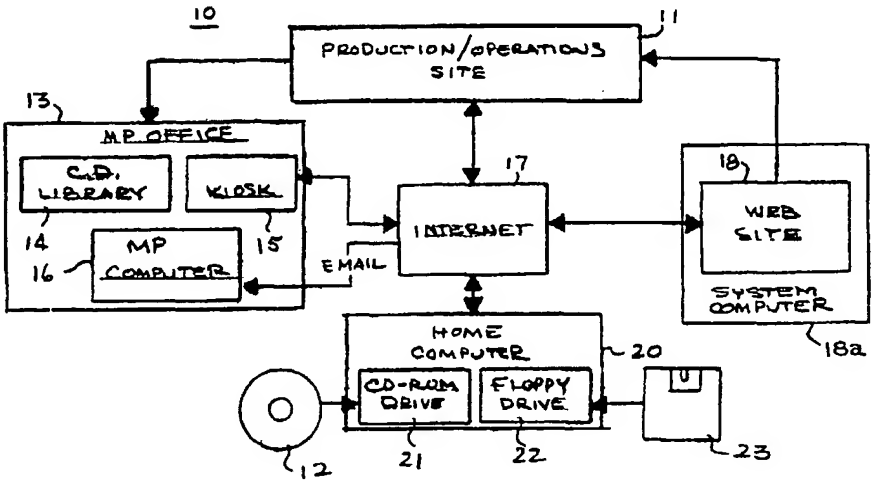
[Continued on next page]

(54) Title: INFORMATION DELIVERY SYSTEM



(57) Abstract: A computer system (10) and method for controlling delivery of information from a medical practitioner to a patient includes storing access controlled modules of information on CD-ROM disks (12), with each module relating to a specific subject. The practitioner checks off prescribed information modules on a prescription pad. Based on the prescription, the patient is provided with a numbered and access controlled CD-ROM disk (12) bearing the prescribed modules. Access codes for the prescribed modules are added to a numbered floppy disk (23) or input directly into a database. The patient places both the access controlled CD-ROM (12) and the floppy disk (23) (if used) in either a kiosk (15) at the practitioner's office or in a computer at the patient's home (20). The computer accesses a system (18a) Internet Web site (18) which, based on the access codes, enables access to the prescribed modules, which are in the form of self-paced tutorials including comprehension-testing questions, while the Web site (18) records data regarding the review process, including the CD-ROM (12) number, the time required for module review, repetition cycles, degree of comprehension and patient questions.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INFORMATION DELIVERY SYSTEM

Background

This application relates to the delivery of information from physicians or other medical practitioners to patients, pursuant to the practitioner's obligation of obtaining informed consent to treatment.

The doctrine of informed consent provides that a practitioner must disclose to a patient the practitioner's diagnosis of the patient's condition, the nature and purpose of any proposed treatment, the risks and consequences of that treatment, any reasonably feasible treatment alternatives and the prognosis if the proposed treatment is not undertaken. Historically, practitioners have directly imparted this information verbally to the patient. Thus, the effectiveness of the information transfer was dependent on the practitioner's memory and communication skills. Also, this approach consumed a considerable amount of the practitioner's time and did not provide effective documentation of the information transfer.

Accordingly, practitioners began using pre-packaged disclosure and consent forms containing basic explanations of specific diagnostic and therapeutic procedures. Since such documentary disclosure devices were dependent on the patient's literacy, they evolved into video devices, such as video cassettes, which could be viewed either at a station in the practitioner's office or at the patient's home, if the patient had a VCR. However, documentation of the video cassette transfer was less satisfactory then with written disclosure documents, since the consent form could only refer to the video cassette, whereas a documentary disclosure form could embody the consent, so that the patient's signature on the consent was proof that the patient had at least seen the document.

However, all of these devices had a fundamental drawback in that they could not assure the patient's comprehension of the information in the document or video tape.

With the dawn of the computer age, more interactive programs of patient education became possible. One such program is the Patient Advise and Consent Encounter ("PACE"), developed by the American College of Obstetrics and Gynecology. The PACE program is an interactive CD-ROM system, utilizing a separate CD-ROM program or module for each procedure or group of related procedures. The patient plays the interactive program on a multimedia computer in the practitioner's office and responds to its prompts and questions. The patient's progress is recorded on a floppy disk and a summary printout is generated for the practitioner. The electronic record documents that the information was presented and also evidences the level of the patient's comprehension. The program uses a separate CD-ROM for each information module to make it more convenient for the practitioner to limit the patient's exposure to only those modules which are prescribed. However, this program must be utilized in the practitioner's office, which may be an inhibiting and distracting venue. Furthermore, the program does not provide for regular updates of the information modules.

Summary

This application discloses a system and method for controlling delivery of information from a medical practitioner to a patient, which avoids disadvantages of prior systems while affording additional advantages.

An aspect of the system and method is that it utilizes a virtual site on a computer network for controlling, and recording the progress of, the patient's review of prescribed information.

Another aspect is the use of access control and access codes so that multiple modules of information can be stored on a single storage medium while still limiting the patient's access to only prescribed modules.

In connection with the foregoing aspects, another aspect is the prevention of viewing of the encrypted modules except via the virtual site.

Still another aspect is the provision of immediate feedback to the practitioner and to the information module producers via the computer network.

Still another aspect is the use of the Internet without compromising patient confidentiality by obviating transmission of patient information.

Yet another aspect is effective electronic documentation of patient review of and comprehension of prescribed information.

A still further aspect is the accommodation of patient review of prescribed information in privacy and at the patient's own pace.

Certain ones of these and other aspects may be realized by providing a computer system for controlling delivery of information from a medical practitioner to a patient, comprising: a computer network, a portable storage medium storing modules of information, a patient computer in communication with the network and programmed to read the storage medium to display patient interface screens to guide the patient through review of modules of information stored on the medium in accordance with a prescription by the medical practitioner, and a system computer in communication with the network and programmed to establish a virtual site accessible via the network from the patient computer, the patient computer being programmed to access the virtual site via the network, the system computer being programmed to record at the virtual site the progress of patient review of modules of information.

Other aspects may be realized by providing a system of the type set forth wherein the modules of information are access controlled, access codes for selected modules being provided on another storage medium which is also received in the patient computer for controlling access to the selected modules.

Still other aspects maybe realized by controlling the access and decryption through the virtual site.

Other aspects may be realized by updating the information modules in accordance with feedback from the patient and the practitioner.

Brief Description of the Drawings

For the purpose of facilitating an understanding of the subject matter sought to be protected, there are illustrated in the accompanying drawings embodiments thereof, from an inspection of which, when considered in connection with the following description, the subject matter sought to be protected, its construction and operation, and many of its advantages should be readily understood and appreciated.

FIG. 1 is a functional block diagrammatic view of an information prescription system;

FIG. 2 is a functional flow chart of the operation of the system of FIG 1;

FIGS. 3, 3A and 3B are a flow chart of software controlling operations of the interaction between the patient computer and the Web site of the systems of FIG. 1; and

FIGS. 4A - 4E are illustration of computer screen displays usable in the operation of system of FIG 1.

Detailed Description

Referring to FIG. 1, there is illustrated an information prescription system 10. The system includes a production/operations site 11 (which may represent more than one physical location), wherein the information content is generated and recorded on a storage medium, such as a compact disk ("CD") 12. While each CD 12 could be of the writeable type, it is preferably in the form of read-only memory, i.e., a CD-ROM. The information is organized into modules, with each module relating to a particular subject, such as a particular illness, condition, medication, treatment, or the like, and each module may include both text and images or videos organized so as to facilitate comprehension. The modules of information are stored on the storage medium in an access controlled form, and a number of such modules may be stored on a single CD 12 or other storage medium. Access control may be provided by, e.g., encrypting the data on the CD, hidden directory (wherein the directory of CD contents is stored away from the CD), control through the Web site server or the like. Access may be authorized, e.g., by a hardware key, such as a floppy disk containing authorization codes, or by entry of authorization codes on the Web site server, such as by a nurse or other staff person.

The completed CDs are distributed to physicians, or other medical practitioners. Thus, the system 10 includes a medical practitioner ("MP") office 13 which includes a CD library 14, including a number of the CDs 12 pertinent to the MP's practice. The MP office 13 also includes a kiosk 15, which is a computer or other Internet access device dedicated to patient use in viewing information modules stored on a CD 12. Typically, the MP office 13 will also include an MP computer 16 for use by the practitioner.

Both the kiosk 15 and the MP computer 16 are provided with suitable modems (not shown) for providing connection, via an Internet service provider, to the Internet, indicated at 17. The system 10 also includes a system virtual site, in the nature of a Web site 18

established by a system computer 18a, which is also coupled to the Internet 17 and is in direct communication with the production/operations site 11, which site is preferably also adapted to be coupled to the Internet 17. While a patient can view information modules at the kiosk 15 at the MP office 13, the system also contemplates viewing the information modules at a home computer 20 located at the patient's home. This is feasible as long as the home computer 20 includes a CD-ROM drive 21 and a floppy drive 22 for accommodating a standard "floppy" disk 23, such as a 3¼"-diskette. Thus, it will be appreciated that all of the production/operations site 11, the MP office 13, the Web site 18 and the patient computer 20 are coupled to the Internet for Internet communication with one another. In this regard, preferably the kiosk 15 is designed for automatic Internet connection with the Web site 18, as will be explained more fully below.

Referring to FIG. 2, the operation of the system 10 will be explained in greater detail. FIG. 2 depicts a flow chart 30 of the system operation, with particular emphasis on the CD production aspect of the system. Fundamentally, CD production takes place at the production/operations site 11. Data is collected at 31 from standard sources, such as on-line sources, medical texts, journals and the like, and organized into information modules, as explained above. Initially, each module is written or revised at an MP level at 32 and the content is then edited, at 33, and submitted to a review panel for acceptance. If, at 34, the module information content is not accepted, it is returned to 32 for further rewriting or revision. If it is accepted, it is then rewritten for comprehension at the fourth-grade level, at 35, and then animation, graphics, photographs and other images are added, as necessary and/or desirable, and a prototype is then mounted at 36. Then, at 37, the prototype content is submitted to a focus group for review. If, at 38, the content is not accepted, it is returned for rewrite and/or revision of graphics at 35 and 36. If it is accepted, a prototype

CD is created at 39 and tested at 40. If, at 41, the prototype is not accepted after testing, it is returned to 39. If it is accepted, it is submitted for focus group review of the entire system at 42. If, at 43, the system is not accepted, it is returned to 39. If it is accepted, the final CD is produced at 44, provided with an identifier such as an appropriate number and, at 45, distributed to medical practitioners.

At the MP office 13, the MP who wishes certain information to be reviewed by a patient, such as for the purpose of obtaining informed consent to a treatment procedure, writes a prescription for the desired information, such as by checking off appropriate modules from a list or prescription form. The prescription is then submitted to a nurse or other assistant who issues the CD or CDs containing the prescribed information module or modules, and, in the case of a hardware key, may also add to an access control floppy disk access codes for the prescribed information modules. Both the access controlled CD and the floppy disk (if used) are then given to the patient to view the information, either at the kiosk 15 in the MP office 13 or at the home computer 20. In either case, the patient accesses the Web site 18, as at 48, and views the prescribed information modules. Preferably, each of the information modules is designed in the form of a tutorial and includes questions designed to test the patient's comprehension of the material. Thus, after each section of an information module, one or more questions may be presented, preferably in multiple-choice form, and the patient answers the questions with the use of a keyboard, mouse or the like, as at 49. As will be explained more fully below, the Web site 18 automatically monitors the progress of the patient's review of the information modules and checks at 50 to see if the information is being comprehended. If it is not, the patient is prompted to review the material at 48.

When the patient has completed review of the material, then, at 51, a record of the patient review process is analyzed at the Web site and then, at 52, an E-mail with the comprehension review analysis is forwarded to the prescribing MP. The MP can then, if necessary, conduct supplemental or follow-up education of the patient and can also, at 53, feed back to the system comments on the information module. At 54, on a weekly basis, the patient comprehension review analysis and MP feedback with respect thereto is analyzed and then reviewed at 55 and this review result is then utilized for revision of the information module content at 32, as necessary. This review information is also used, at 56, along with information from the standard data sources, for producing MP updates of new technology and practices for submission to the MP for current education of the MP. Thus, a significant aspect of the present system is that it affords both patient and medical practitioner feedback which may be used in evaluating, updating and revising information modules.

The operation of the system 10 for interactive patient review of information modules will now be explained with reference to FIGS. 3-3B and 4A-4E. FIGS. 3-3B illustrate a flowchart of the program software 60 controlling the interactive patient review of information modules,. FIG. 3A illustrating that portion of the program executed at either the kiosk 15 or the home computer 20, either of which may hereinafter be referred to as a "patient computer," while FIG. 3B illustrates that portion of the program executed at the system computer 18A using the Web site 18. FIGS. 4A-4E illustrate representative computer screen displays.

Initially, at 61, the program accesses the Web site 18. Preferably, this will occur automatically at the kiosk 15 and, at the home computer 20, the patient would access the Web site 18 in the same manner that any other Internet Web site is accessed. After the

Web site is accessed, at 63, the site will begin to monitor the patient computer at 64. At this point, the screen display of FIGS 4A-4B would appear, prompting the patient to select a particular information module by entering a user name code next to that module designation. If the user has not been authorized to view that module, the user would be so informed by an appropriate display message. If the user is authorized, the screen display of FIG. 4C would appear, prompting the user to insert the CD (and, if used, the floppy disk) in the appropriate drives. Then, at 62 (FIG. 3A), the patient loads the access controlled CD 12 and the floppy disk 23 (if used), respectively, into the CD-ROM drive 21 and floppy drive 22 of the patient computer 15 or 20 (see FIG. 1). When the CD is inserted, the authorized and selected information module will begin to be displayed. The first screen display of such a module is illustrated in FIG. 4D. It will be appreciated that the module could include numerous such pages, including both text and images or videos. Interspersed throughout the module screen displays or at the end thereof, will be displayed patient-comprehension evaluation questions (not shown) which will prompt patient responses to enable the system to evaluate the patient's comprehension of the material. The last screen display of the module, illustrated in FIG. 4E, includes alternative NEXT prompts, depending upon whether the patient does or does not have further questions. If the patient has no questions, selection of that prompt will return the user to the screen display of FIG. 4A. If there are questions, selection of that prompt will bring up an e-mail section (not shown) to permit the patient to enter and e-mail the questions to the Web site server.

Meanwhile, at 65 (FIG. 3A), the patient computer will read the CD number and access codes at 65 and then, at 66, will check to see if a patient entry has been made (via keyboard or mouse click). If not, the program will return to 26 and continue checking for

a patient entry. If there is a patient entry, the program will next check at 67 to see if it is an E-mail transmission. If so, the program will, at 68, transmit the E-mail message to the MP computer 16. If the entry is not an E-mail, the program then, at 69, checks to see if it is an answer to a comprehension question. If so, the program, at 70, transmits the answer to the Web site 18.

At the Web site, at 73 (FIG. 3B), the program checks to see if a transmission has been received from the patient computer. If not, it returns to 64 to continue monitoring. If a transmission is received, the program then checks at 74 to see if it is a request to view an information module. If not, it then checks at 75 to see if the entry is an answer to a comprehension question. If not, it returns to 64. If the entry is an answer to a comprehension question, the program then records it at 76 against the information module section being viewed.

Meanwhile, at the patient computer, if, at 69, the patient entry was not an answer to a comprehension question, the program then checks, at 71, to see if it is a request to view an information module section. If not, the program returns to 66. If it is a request to view, the program then, at 72, transmits this request, along with the CD number, the access codes and a time stamp to the Web site, where it will cause a "YES" answer at 74. The program will then, at 77, stop a timer, if it is already running, and record the elapsed time for review of the previously-viewed information module section. The program then, at 78, restarts the timer and, at 79, checks the transmit request against the CD number and access codes and then decides, at 80, whether the section sought to be viewed is on the CD and has been approved for viewing. If not, the program, at 81, advises the patient computer that access is denied. If there is a match, the program, at 82, transmits an access control key to the patient computer.

Meanwhile, at the patient computer (FIG. 3A), after the transmit request has been transmitted to the Web site at 72, the program checks at 83 to see if a response has been received. If not, it returns to 72. If so, it checks at 84 to see if the response is an access control key. If not, it then, at 85, displays an access denied screen and returns to 66. If the response is an access control key, the program, at 86, displays the selected module section and then returns to 66.

Thus, it can be seen that the patient cannot view a prescribed information module without accessing the Web site, and the Web site is actively involved in authorizing decryption of the prescribed module or module section, and in monitoring the patient review process. Even though there is interaction between the patient computer and the Web site, no patient information need be transmitted. The only information that is transmitted to the Web site is the number of the CD loaded in the patient's computer and the access codes on the floppy disk.. Only the MP knows what disk was given to what patient. Because no patient information is transmitted to the system administrator, patient privacy is fully protected

Significantly, the present system provides a complete electronic record of patient review of the prescribed information modules, so that there is full documentation not only of the fact that the information was transmitted to the patient, but also the level of the patient's comprehension. The pace of the patient review is completely under the patient's control, repetition is easily accomplished, and the CD may, if desired, be viewed at the patient's home in privacy and without the distractions and pressures which might exists in the MP's office. Patient comprehension is enhanced by the fact that the patient receives only the information modules which are prescribed by the physician as being necessary, so the patient is not burdened with extraneous material. A summary of the patient review is

e-mailed or faxed to the practitioner, who can then determine if further patient education is needed. The hybrid CD/Web site nature of the system affords the connectivity and immediate feedback of the Internet, but allows the high resolution video and in-depth multimedia content available with the CD format. Frequent and regular updates of information modules is a fundamental aspect of the system, and the automated nature of the feedback involved permits inexpensive creation of databases of great utility to insurance companies, health research groups and others seeking large-scale information on real patient outcomes.

While, in FIGS. 3-3B, a specific interactive protocol has been described, it will be appreciated that other interactive approaches could be used. Also, while the preferred storage medium for the information modules is a CD, it will be appreciated that other types of storage media could be utilized.

From the foregoing, it can be seen that there has been provided an improved system for delivering information from a medical practitioner to a patient, which affords complete patient privacy, fosters patient comprehension, eliminates irrelevant information transfer, provides automatic patient and MP feedback, and automatically documents patient review and comprehension.

The matter set forth in the foregoing description and accompanying drawings is offered by way of illustration only and not as a limitation. While particular embodiments have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from the broader aspects of applicants' contribution. The actual scope of the protection sought is intended to be defined in the following claims when viewed in their proper perspective based on the prior art.

I Claim:

1. A computer system for controlling delivery of information from a medical practitioner to a patient, comprising:

a computer network,

a portable storage medium storing modules of information,

a patient network access device in communication with the network and programmed to read the storage medium to display patient interface screens to guide the patient through review of modules of information stored on the medium in accordance with a prescription by the medical practitioner, and

a system computer in communication with the network and programmed to establish a virtual site accessible via the network from the patient computer,

the patient computer being programmed to access the virtual site via the network,

the system computer being programmed to record at the virtual site the progress of patient review of modules of information.

2. The computer system of claim 1, wherein the computer network is the Internet and the virtual site is a Web site.

3. The computer system of claim 1, wherein the portable storage medium is a CD.

4. The computer system of claim 3, wherein the portable storage medium is a CD-ROM.

5. The computer system of claim 1, wherein the system computer is programmed to record at the virtual site the time required for patient review of modules of information.

6. The computer system of claim 1, wherein each module of information includes questions to test the patient's comprehension of the information.

7. The computer system of claim 1, wherein the patient network access device is a kiosk located at a medical practitioner facility and dedicated to patient review of modules of information.

8. The computer system of claim 1, wherein the portable storage medium is provided with an identifier to distinguish it from other storage media, which identifier is recordable at the virtual site.

9. A computer system for controlling delivery of information from a medical practitioner to a patient, comprising:

a first portable storage medium storing access controlled modules of information,

a second storage medium storing access codes for selected modules stored on the first medium,

a patient computer, and

a communication link between the patient computer and the second storage medium,

the patient computer adapted to receive at least the first storage medium and access the selected modules on the first storage medium for which access codes are stored on the second storage medium,

the patient computer being programmed to display patient interface screens to guide a patient through review of access allowed modules of information stored on the first medium.

10. The computer system of claim 9, wherein the first portable storage medium is a CD-ROM.

11. The computer system of claim 9, wherein the second storage medium is a portable medium.

12. The computer system of claim 10, wherein the second portable storage medium is a floppy disk, the patient computer being adapted to receive the floppy disk.

13. A computer system for controlling delivery of information from a medical practitioner to a patient, comprising:

a computer network,

a first portable storage medium storing access controlled modules of information,

a second portable storage medium storing access codes for selected modules stored on the first medium,

a patient computer in communication with the network and adapted to receive the first and second storage media, and

a system computer in communication with the network and programmed to establish a virtual site accessible via the network from the patient computer,

the patient computer being programmed to access the virtual site and transmit access codes thereto via the network,

the system computer being programmed to respond to access codes on the second storage medium to enable decryption of the selected modules on the first storage medium at the patient computer,

the patient computer being programmed to display patient interface screens to guide the patient through review of decrypted modules of information stored on the first medium,

the system computer being programmed to record at the virtual site the progress of patient review of decrypted modules of information.

14. The computer system of claim 13, wherein the computer network is the Internet and the virtual site is a Web site.

15. The computer system of claim 13, wherein the first portable storage medium is a CD-ROM.

16. The computer system of claim 15, wherein the second portable storage medium is a floppy disk.

17. The computer system of claim 13, wherein the system computer is programmed to record at the virtual site the time required for patient review of modules of information.

18. The computer system of claim 13, wherein each module of information includes questions to test the patient's comprehension of the information.

19. The computer system of claim 13, wherein the patient computer is a kiosk located at a medical practitioner facility and dedicated to patient review of modules of information.

20. The computer system of claim 13, wherein the first portable storage medium is one of a plurality of first portable storage media respectively storing different modules of information and respectively having unique identifiers, the patient computer being programmed to transmit the identifier to the virtual site along with the access codes, the system computer being programmed to respond to both the identifier and the access codes in enabling decryption.

21. A computer-implemented method for controlling delivery of information from a medical practitioner to a patient, the method comprising:

providing a virtual site connected to a computer network which includes a patient computer,

prescribing modules of information to be delivered to a patient,

providing to the patient a computer-readable portable storage medium having stored thereon the prescribed modules of information,

displaying on the patient computer patient interface screens to guide the patient through review of modules of information stored on the storage medium,

recording at the virtual site the progress of patient review of the modules of information.

22. The method of claim 21, wherein the virtual site is an Internet Web site.

23. The method of claim 21, wherein the patient is provided with a storage medium in the form of a CD-ROM and the modules of information include images.

24. The method of claim 21, wherein the recording includes recording of the time required by the patient for review of each prescribed module of information.

25. The method of claim 21, wherein the displaying includes displaying questions to test the patient's comprehension of the information in each module.

26. A computer-implemented method for controlling delivery of information from a medical practitioner to a patient, the method comprising:

prescribing modules of information to be delivered to a patient,

providing to the patient a first computer-readable portable storage medium having stored thereon access controlled modules of information including the prescribed modules,

providing to the patient a second computer-readable portable storage medium having stored thereon access codes for the prescribed modules stored on the first medium,

utilizing a patient computer to access the prescribed modules of information in accordance with the stored access codes, and

displaying on the patient computer patient interface screens to guide the patient through review of the prescribed modules of information.

27. The method of claim 26, wherein the patient is provided with a first storage medium in the form of a CD-ROM and the modules of information include images.

28. The method of claim 27, wherein the patient is provided with a second storage medium in the form of a floppy disk.

29. A computer-implemented method for controlling delivery of information from a medical practitioner to a patient, the method comprising:

providing a virtual site connected to a computer network which includes a patient computer,

prescribing modules of information to be delivered to a patient,

providing to the patient a first computer-readable portable storage medium having stored thereon access controlled modules of information including the prescribed modules,

providing to the patient a second computer-readable portable storage medium having stored thereon access codes for the prescribed modules stored on the first medium,

using the patient computer to receive the storage media and to access the virtual site,

using the virtual site to enable access to the prescribed modules of information in accordance with the access codes,

displaying on the patient computer patient interface screens to guide the patient through review of access allowed modules of information stored on the storage medium, and

recording at the virtual site the progress of patient review of the modules of information.

30. The method of claim 29, wherein the virtual site is an Internet Web site.

31. The method of claim 29, wherein the patient is provided with a first storage medium in the form of a CD-ROM and the modules of information include images.

32. The method of claim 31, wherein the patient is provided with a second storage medium in the form of a floppy disk.

33. The method of claim 29, wherein the recording includes recording of the time required by the patient for review of each prescribed module of information.

34. The method of claim 29, wherein the displaying includes displaying questions to test the patient's comprehension of the information in each module.

35. A computer-implemented method for controlling delivery of information from a medical practitioner to a patient, the method comprising:

providing a virtual site connected to a computer network which includes a patient computer,

prescribing modules of information to be delivered to a patient,

providing to the patient a computer-readable portable storage medium having stored thereon the prescribed modules of information,

displaying on the patient computer patient interface screens to guide the patient through review of modules of information stored on the storage medium,

recording at the virtual site the progress of patient review of the modules of information,

electronically communicating to the prescribing practitioner a record of the progress of the patient review of the prescribed modules of information,

and updating prescribed modules of information in accordance with the record of the progress of patient review and practitioner comments thereon.

36. The method of claim 35, wherein the electronic communicating is by E-mail.

FIG 1

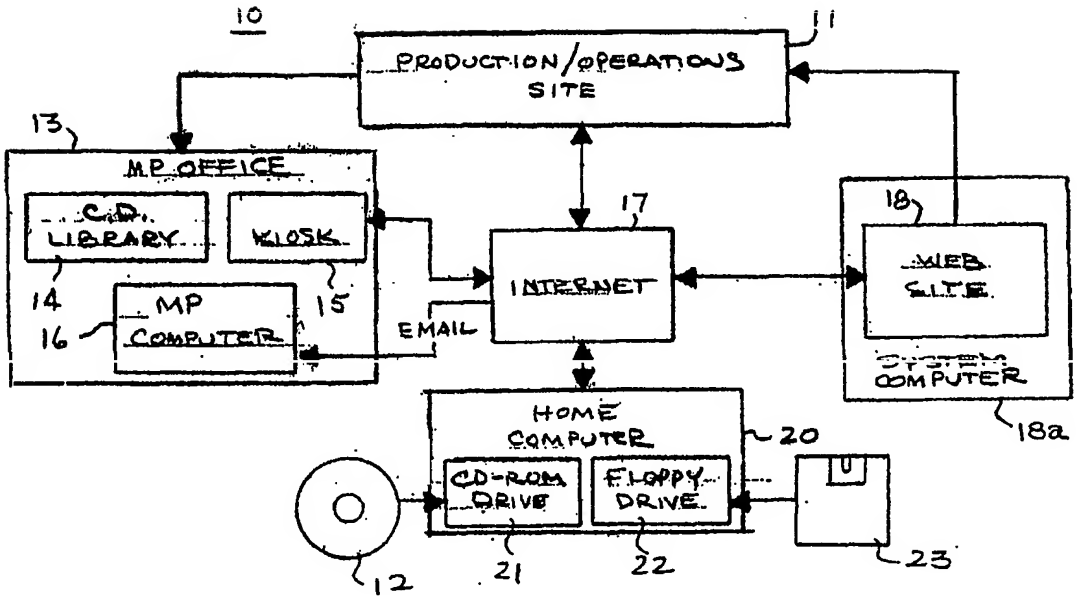
10
11
PRODUCTION/OPERATIONS SITE
13
MP OFFICE
C.D. LIBRARY
KIOSK
14
15
MP COMPUTER
16
17
INTERNET
EMAIL
18
WEB SITE
SYSTEM COMPUTER
18a
HOME COMPUTER
20
CD-ROM DRIVE
FLOPPY DRIVE
21
22
12
23

FIG 2

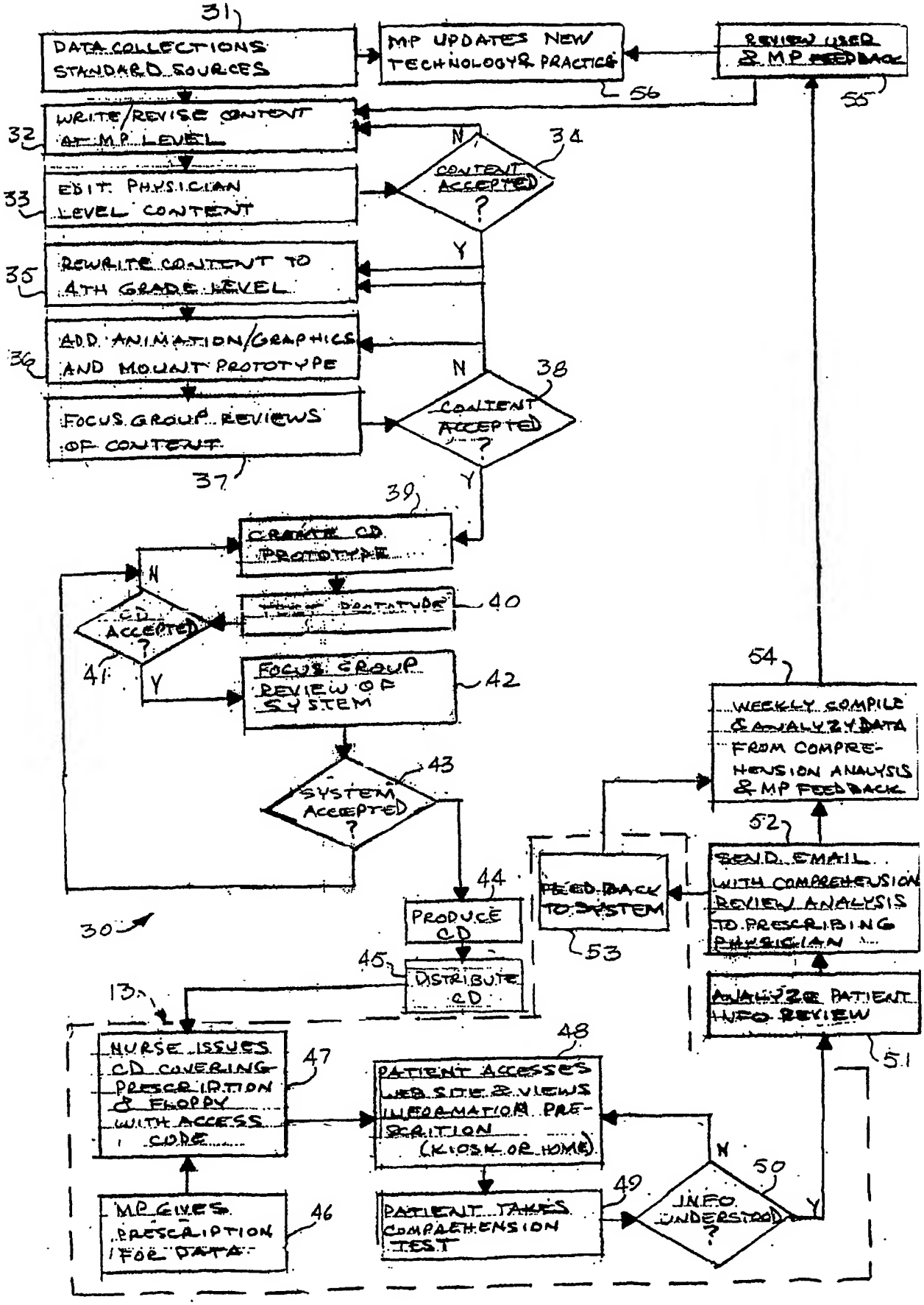
31
DATA COLLECTIONS STANDARD SOURCES
MP UPDATES NEW TECHNOLOGY & PRACTICE
REVIEW USER & MP FEEDBACK
56
55
32
WRITE/REVISE CONTENT AT MP LEVEL
33
EDIT PHYSICIAN LEVEL CONTENT
34
N
CONTENT ACCEPTED ?
Y
35
REWRITE CONTENT TO 4TH GRADE LEVEL
36
ADD ANIMATION/GRAPHICS AND MOUNT PROTOTYPE
38
N
CONTENT ACCEPTED ?
FOCUS GROUP REVIEWS OF CONTENT
37
Y
39
CREATE CD PROTOTYPE
N
CD ACCEPTED ?
41
Y
40
FOCUS GROUP REVIEW OF SYSTEM
42
43
SYSTEM ACCEPTED ?
30
44
PRODUCE CD
45
DISTRIBUTE CD
13
54
WEEKLY COMPILE & ANALYZE DATA FROM COMPREHENSION ANALYSIS & MP FEEDBACK
52
SEND EMAIL WITH COMPREHENSION REVIEW ANALYSIS TO PRESCRIBING PHYSICIAN
FEEDBACK TO SYSTEM
53
ANALYZE PATIENT INFO REVIEW
51
NURSE ISSUES CD COVERING PRESCRIPTION & FLOPPY WITH ACCESS CODE
47
48
PATIENT ACCESSES WEB SITE & VIEWS INFORMATION PRESCRITION (KIOSK OR HOME)
MP GIVES PRESCRIPTION FOR DATA
46
PATIENT TAKES COMPREHENSION TEST
49
N
INFO UNDERSTOOD ?
50
Y

FIG 3A

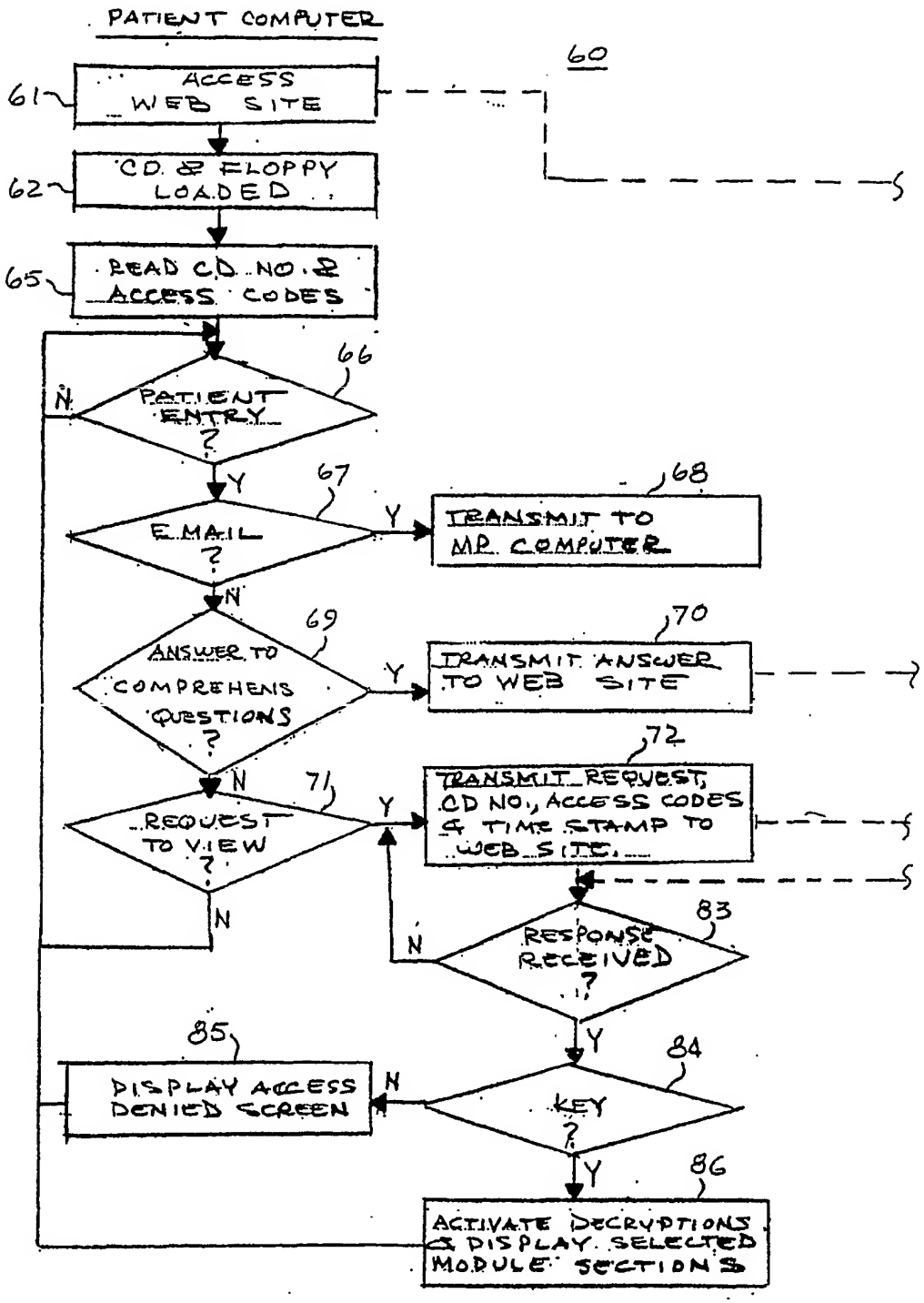
PATIENT COMPUTER
60
61
ACCESS WEB SITE
62
CD & FLOPPY LOADED
65
READ CD NO. & ACCESS CODES
66
PATIENT ENTRY ?
N
Y
67
E MAIL ?
Y
68
TRANSMIT TO MP COMPUTER
N
69
ANSWER TO COMPREHENS QUESTIONS ?
Y
70
TRANSMIT ANSWER TO WEB SITE
N
71
REQUEST TO VIEW ?
Y
72
TRANSMIT REQUEST, CD NO., ACCESS CODES & TIME STAMP TO WEB SITE.
N
83
RESPONSE RECEIVED ?
N
Y
84
KEY ?
N
Y
85
DISPLAY ACCESS DENIED SCREEN
86
ACTIVATE DECRYPTIONS & DISPLAY SELECTED MODULE SECTIONS

FIG. 3

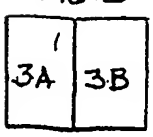
3A
3B

FIG 3B

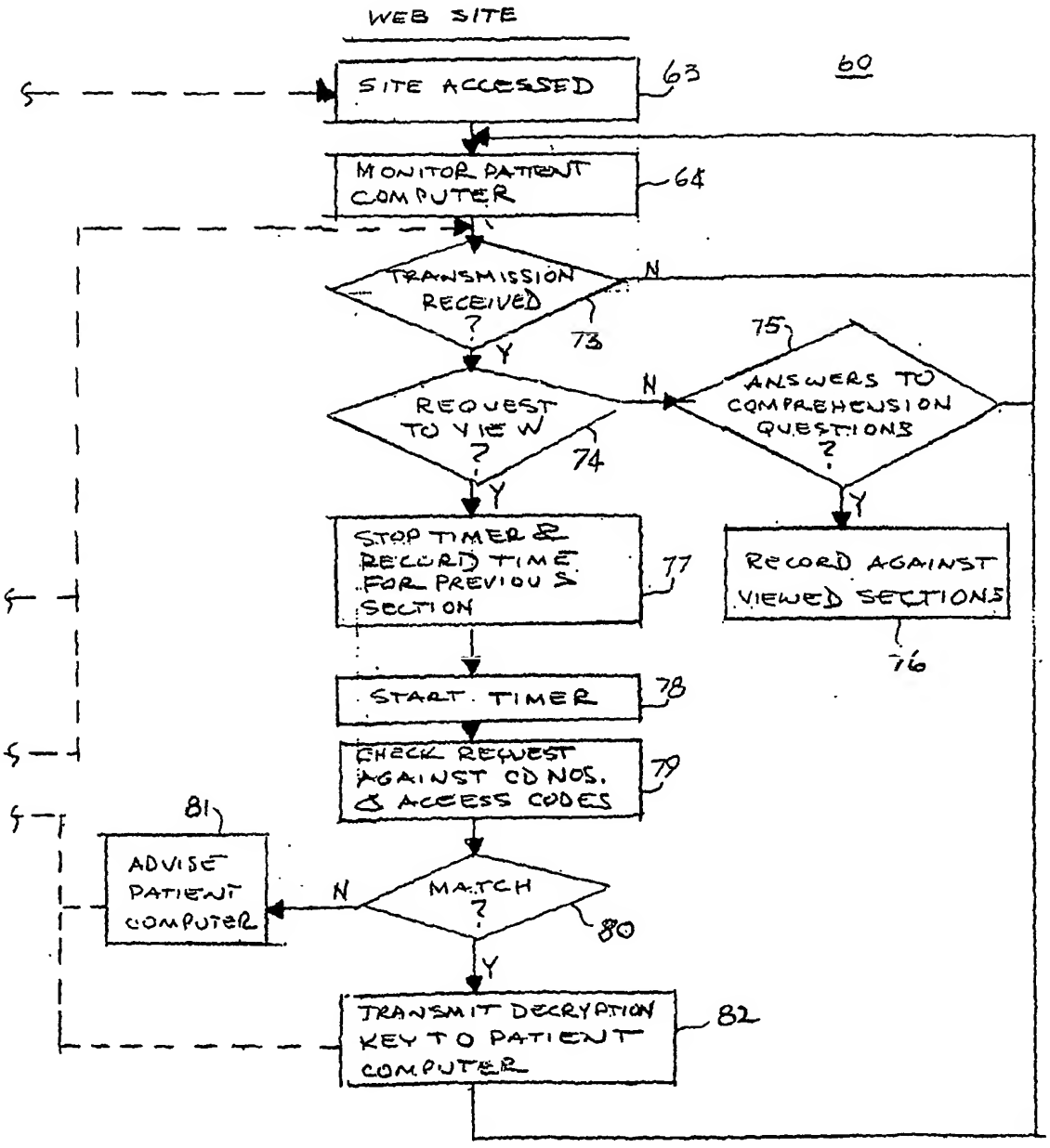
WEB SITE
60
SITE ACCESSED
63
MONITOR PATIENT COMPUTER
64
TRANSMISSION RECEIVED ?
73
N
Y
REQUEST TO VIEW ?
74
N
Y
ANSWERS TO COMPREHENSION QUESTIONS ?
75
Y
STOP TIMER & RECORD TIME FOR PREVIOUS SECTION
77
RECORD AGAINST VIEWED SECTIONS
76
START TIMER
78
CHECK REQUEST AGAINST CD NOS. & ACCESS CODES
79
81
ADVISE PATIENT COMPUTER
N
MATCH ?
80
Y
TRANSMIT DECRYPTION KEY TO PATIENT COMPUTER
82

FIG 4A

Welcome to the Md*Infocom* Patient Learning Center.

This will help you understand your condition. People who understand their medical condition get better sooner.

Patient learning has three parts. First, you need the facts that apply to your case. Our Information Prescription will do this. Next, you will be checked on what you have learned. You will be asked questions throughout this lesson. Finally, a report on what you have learned will be given to doctor. Your doctor can then talk to you about the parts that were unclear. The goal is to give you good information. This will help your doctor teach you about your problem.

This Learning System has no time limits. Please read this at your own pace. This is your time to learn about your knee problem.

Please start by typing your code in the area provided, then click on the button to view your selection.

It is very important that you carefully type the correct code.

Once you have reviewed the materials please use the last selection to enter any additional questions and or comments and exit.

MD*Infocom* Knee Information Module Version 1.0 Selections:

Section 1: What are the structures that make up the knee.

Please enter the code: [Your username code] [What makes up a Knee?] [Clear Code]

Section 2: What is Arthroscopy?

Please enter the code: [Your username code] [What is Arthroscopy?] [Clear Code]

Section 3: Tell me more about the meniscus (knee).

Please enter the code: [Your username code] [What is the meniscus?]

FIG 4B

Clear Code

Section 4: Tell me more about ligaments.

Please enter the code: Your username code What is a ligament? Clear Code

Section 5: What is the surgery like?

Please enter the code: Your username code What's involved in surgery? Clear Code

Once you have viewed any or all of the sections, you can send additional questions or comments below or simply enter your code and click button to exit.

Please enter the code: Your username code Any questions... Send questions Clear Code

FIG 4C

Welcome to MD*Infocom* Systems Knee Information Starting Page

Using the following selections you can view information your doctor has provided (CD) about your condition or prognosis involving your knee(s).

This system requires that you place the CD provided in your or Doctor's PC's CD drive.

(Default), If you have a D: drive CD click here:

(Not yet available), If you have a E: drive CD click here:

(Note: If you don't know what drive your CD is, the Windows Explorer program can display all your drives.)

For webpage problems: Report Problem

(For testing, the files required must reside in your hard drive C: in the directory c:\knee
Proceed in C: Drive Test Mode)

FIG 4D

MD*Infocom* - YOUR AND KNEE ARTHROSCOPY

Welcome. You are here because you need knee surgery.

To prepare you, your doctor has chosen this lesson(s) for you. This will get you ready and teach you about your surgery. This is the first step to get you ready for surgery. This will be part of your Informed Consent Form (the paper that lets your surgeon do the surgery). Your doctor will talk to about this lesson before you ok the surgery. Your doctor will help you learn the parts that were hard for you.

Some example images are also shown. Please take your time.

If you have questions you can select to do that at the end of this page.

WHAT IS KNEE ARTHROSCOPY?

Knee Arthroscopy is a way to look inside your knee. A knee scope is placed through tiny holes in your knee. This scope is called an arthroscope. This helps your doctor to see all the parts of your knee. He can then find out what is wrong. The doctor can fix or remove the injured parts of your knee.

file://E:\knee\arthroscopy.html

FIG 4E

surgery are treated with antibiotics (an-ti-bi-ot-ics). Antibiotics are drugs that kill germs. These drugs can be taken by mouth or given as a shot. Some bad infections need a second knee surgery to clean them up. The knee is washed out with antibiotic drugs. When the knee is flushed out, the germs are washed away.

Some drugs taken make it harder for the body to fight infections. This includes drugs used to reduce swelling such as Naprosyn, Advil, aspirin and steroids. Cancer fighting drugs can also cause this problem. One such drug is Methotrexate. You may be told not to take these around the time of your surgery.

Other common problems are swelling of the veins or blood clots in the legs. This is called phlebitis or thrombophlebitis (throm bo fle bi tis). The word thrombo means clot. Phlebitis means swelling of the vein. These clots form in the veins of the leg. There are two types. Superficial thrombophlebitis is one type. It's when blood clots are found near the skin's surface. This can look bad and hurt. It will last only a few days. Deep thrombophlebitis is the next type. These are found deep in the calf muscle. These deeper clots are found in the larger blood vessels. They can break loose and travel to the lungs or heart. These clots can cause breathing problems or even death. This is very rare.

Blood clots occur in people who do not move about after surgery. You must move your muscles and legs. By moving about after surgery, you will have little chance of getting blood clots. You should walk around your home and get up when you can. Do not sit for a long time with your knees bent. Having your legs bent can pinch the veins in the back of your knees. This slows the blood flow back to your heart. Tell your doctor if you have ever had blood clots. Your doctor may give you a blood thinner before surgery. These help keep your blood from clotting.

Problems can occur with any surgery. People who smoke, are heavy or have heart problems are at a higher risk. The best way to prevent risk is to tell your doctor about any health problems before your surgery.

Please select one of the following:

NEXT I have no questions or NEXT, I have some questions

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/25345

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : G09B 23/28
US CL : 434/262 .
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 434/262

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
patient client student prescription regimen training network

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,282,404 B1 (LINTON) 28 August 2001, see entire document.	
A	US 5,823,781 A (HITCHCOCK et al) 20 October 1998, See entire document.	
A	US 5,711,671 A (GEESLIN et al) 27 January 1998, See entire document.	
A	US 6,167,362 A (BROWN et al) 26 December 2000, See entire document.	
A	US 6,146,148 A (STUPPY) 14 November 2000, See entire document.	
A	US 6,171,112 B1 (CLARK et al) 09 January 2001, See entire document.	
A	US 5,951,300 A (BROWN) 14 September 1999, See entire document.	
Y, E	US 6,283,761 B1 (JOAO) 04 September 2001, See entire document.	2,14,22,30,36

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
26 September 2001 (26.09.2001)

Date of mailing of the international search report
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Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US01/25345

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,722,418 A (BRO) 03 March 1998, See entire document.	1, 3-13,15-21,23-29,31-35